WE CLAIM:

1. A spatial light modulator, comprising:

memory elements configured to store data therein and shift data therebetween; and

light modulation elements alterable in response to the data stored in respective ones of the memory elements.

2. The spatial light modulator according to claim 1, wherein said memory elements are arranged in an array having rows and columns.

3. The spatial light modulator according to claim 2, wherein said memory elements are configured to shift the data bi-directionally between rows.

4. The spatial light modulator according to claim 2, wherein said memory elements are configured to shift the data bi-directionally between columns.

5. The spatial light modulator according to claim 2, wherein said memory elements are configured to shift the data bi-directionally between at least one of non-adjacent rows and non-adjacent columns.

6. The spatial light modulator according to claim 1, wherein said memory elements are arranged in a nonorthogonal pattern.

7. The spatial light modulator according to claim 1, wherein said memory elements are static memory elements.

8. The spatial light modulator according to claim 7, wherein each of the memory elements includes a feedback element.

9. The spatial light modulator according to claim 8, wherein the feedback element is a weak feedback element.

10. The spatial light modulator according to claim 1, further comprising access control elements connected to said respective memory elements.

11. The spatial light modulator according to claim 10, wherein said access control elements include a forward access control element operable to control the state of said respective memory element during a forward shift operation and a reverse access control element operable to control the state of said respective memory element during a reverse shift operation.

12. The spatial light modulator according to claim 1, wherein each of said memory elements further includes an output node electrically coupled to an electrode of said respective light modulation element and to an input node of an additional one of said memory elements.

13. The spatial light modulator according to claim 12, wherein said memory elements are interconnected in a shift register configuration.

14. The spatial light modulator according to claim 13, wherein said memory elements each include a master-slave flip-flop.

15. The spatial light modulator according to claim 13, further comprising:

a timing circuit in communication with each of said memory elements to shift the data between said memory elements.

16. The spatial light modulator according to claim 15, wherein said timing circuit comprises a ripple clock.

17. The spatial light modulator according to claim 15, wherein said light modulation elements comprise liquid crystal material.

18. The spatial light modulator according to claim 17, wherein said light modulation elements further comprise:

a common electrode configured to receive a common electrode signal for said light modulation elements; and

a respective pixel electrode configured to receive the data stored in said respective memory elements.

19. The spatial light modulator according to claim 18, wherein said timing circuit is operable to shift inverted data from a first one to a second one of the memory elements and to switch the common electrode signal to alter the light modulation element associated with the second one of the memory elements as a function of the inverted data.

20. The spatial light modulator according to claim 1, wherein said light modulation elements comprise micromirrors.

21. The spatial light modulator according to claim 1, wherein said memory elements are arranged in blocks, a first one of said blocks configured to receive data from an external input and the others of said blocks configured to receive data from other ones of said memory elements.

22. A method for performing photolithography, said method comprising:

loading data representing an image into memory elements in communication with respective light modulation elements;

altering ones of the light modulation elements in response to the data loaded thereunto to transfer the image onto a substrate;

shifting the data between the memory elements;

altering ones of the light modulation elements in response to the data shifted thereunto to transfer the image onto the substrate.

23. The method according to claim 22, wherein each said altering further comprises:

applying a voltage in response to the data to the change optical characteristics of the light modulation elements.

24. The method according to claim 22, wherein said shifting further comprises:

utilizing a ripple clock to control the timing of said shifting.

25. The method according to claim 22, further comprising:

moving at least one of the substrate and the light modulation elements relative to the other.

26. The method according to claim 25, wherein said altering in response to the shifted data is performed after said moving.